

# Decarbonization Policies in South East Europe

Between climate change and war

March 13, 2024 - Bucharest



## The important role of Energy Audits in Industry and Buildings for achieving EU targets for EE, in 2030

Costas G. Theofylaktos  
Mech. Eng., MSc - Partner of IENE  
Head of Energy Efficiency Committee

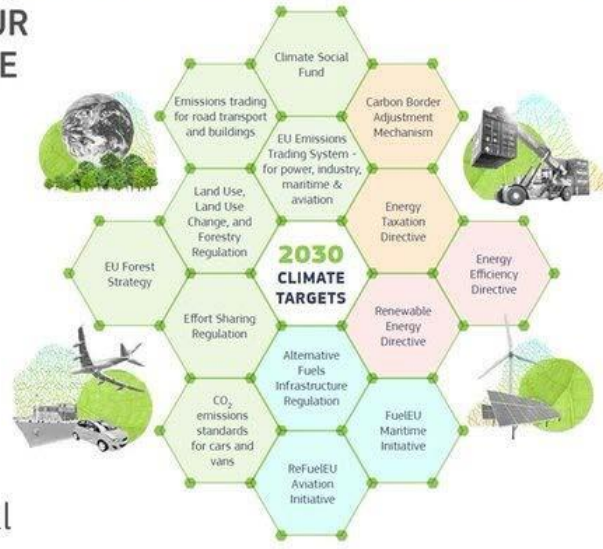
# European Energy Policy Framework

*“Saving energy is a key step to saving the planet. In recent months, Europeans have shown that they are ready and able to face this challenge, and our industry has proven that it can optimise its energy use and production processes. We now need energy efficiency to become an even more systemic part of our society, and this revised directive helps us to do that.”*

*Frans Timmermans, Executive Vice-President for the European Green Deal - 10/03/2023*

## EUROPEAN GREEN DEAL

REACHING OUR 2030 CLIMATE TARGETS



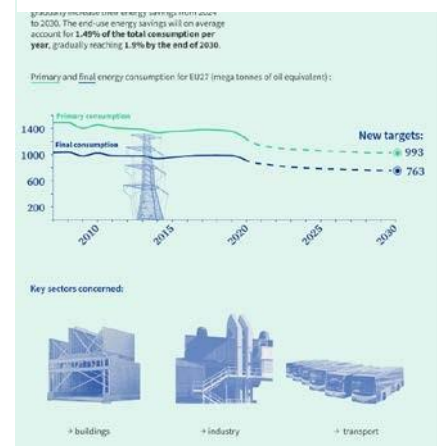
#EUGreenDeal



## Revision of the energy efficiency directive explained

So far, the EU energy efficiency directive has contributed to energy savings of almost one third compared to the 2007 consumption projections for 2030.

However, in light of its commitment to cut greenhouse gas emissions by 2030 by at least 55%, the EU must become much more energy-efficient and the current rules need revision.



EU NET-ZERO INDUSTRY ACT:  
MAKING EUROPE THE HOME OF CLEAN TECH

#NetZeroEU #NetZeroIndustry

**EU Directive  
for Energy  
Efficiency**  
Important role for  
EE in Industry and  
Building sector –  
Main drawbacks

The first EU Directive for EE was adopted in 2012. Then, it was recasted twice: In 2018 and in 2023, «*setting rules and obligations for achieving the EU's ambitious energy efficiency targets*».

The last recast (EU/2023/1791) establishes '**Energy Efficiency first**' as a fundamental principle of EU energy policy, giving it legal-standing for the first time. Also it puts stronger focus on alleviating energy poverty. To optimize energy savings in the industrial sector, the Directive expands **the scope of energy audit** obligations to include all those companies, regardless of their size, which are consuming energy above a certain threshold.

This Directive makes energy management systems a mandatory requirement for large industrial energy consumers to monitor and optimize their energy efficiency..

But still one major issue remains unsolved, even in this 2<sup>nd</sup> recast of the Directive: the "mandatory" **obligation** of the audited company to **implement** "all or some" of the **EE measures** proposed by the energy auditor.



# AUDIT2MEASURE



Co-funded by the European Union under project ID 101075785. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

## AUDIT<sub>2</sub>MEASURE

Leading business towards climate neutrality by speeding up the uptake of energy efficiency measures from the energy audits

## General Information

Proposal ID: 101075785

- Ref. Call: LIFE-2021-CET
- Topic: **LIFE-2021-CET-AUDITS - Uptake of energy audits recommendations for the energy transition of companies**
- Type of Action: LIFE Project Grants
- Duration: 36 Months
- Start Date: **November, 1<sup>st</sup> 2022**
- Ending Date: **November 2025**
- Total Budget: 1,959 M€
- Co-ordinator: RSE

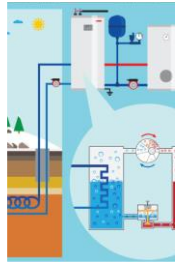
# Partners involved

## Audit 2 Measure Partners



# Motivation and aim

Promoting the uptake of Energy Efficiency measures in Industrial sector



Cutting-edge technical solutions



Renewable energies



Digitalization and automation (ML, AI) → Industry 4.0



From waste to fuels → Circular economy → Industry 5.0

A. Sayeda, Al-Sayed, S. J. Zaidi; *Carbon Dioxide Chemistry, Capture and Oil recovery Book*; 2018

*In order to pave the way towards a sustainable production and enviromental benign integrated route*



# Project outline

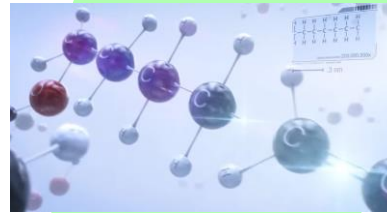
Sustainability,  
replication &  
exploitation



State of the art



Auditization strategy



Support to industries



Capacity building

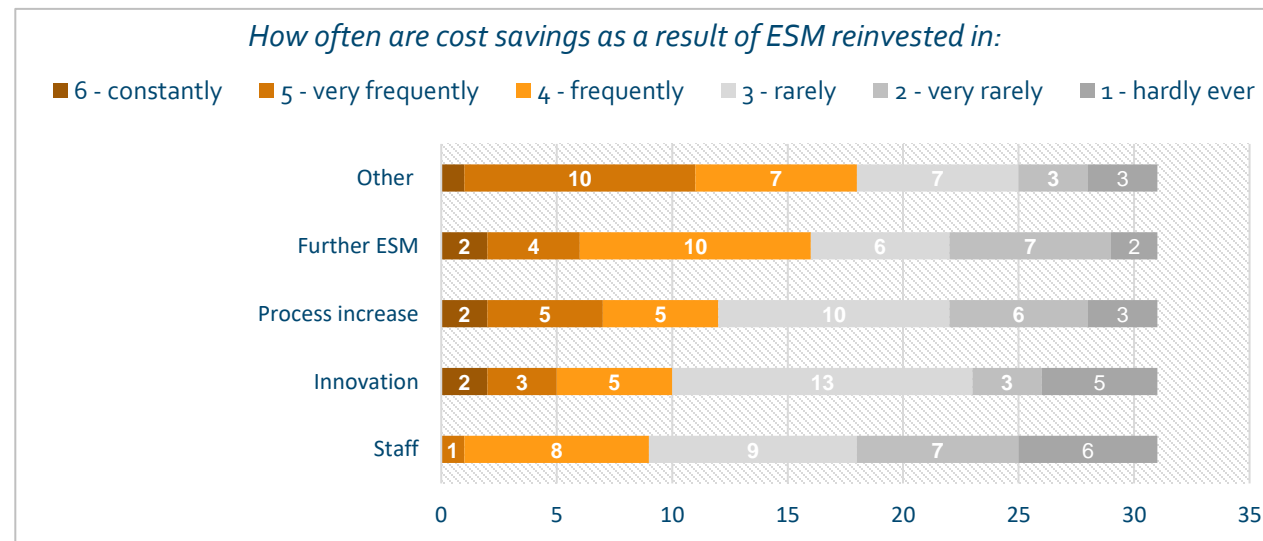
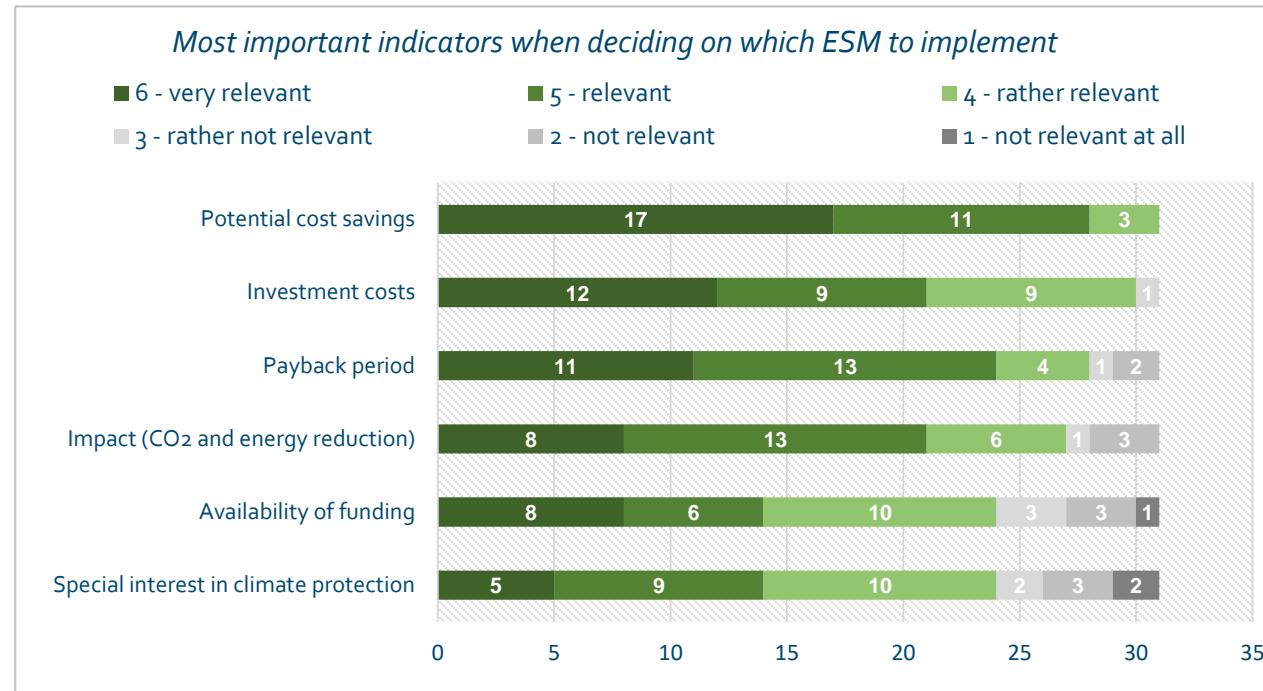




# State of the art: decision processes of companies

## Key findings

- High energy costs are a serious concern for most.
- Most surveyed companies view their climate commitment as positive and are aware of further savings potentials.
- Most surveyed companies have internal staff in charge of energy management, though only a few have a certified energy management system in place.
- ESM investment decisions are mostly made by top management, with internal energy staff and auditors playing an important informational role.

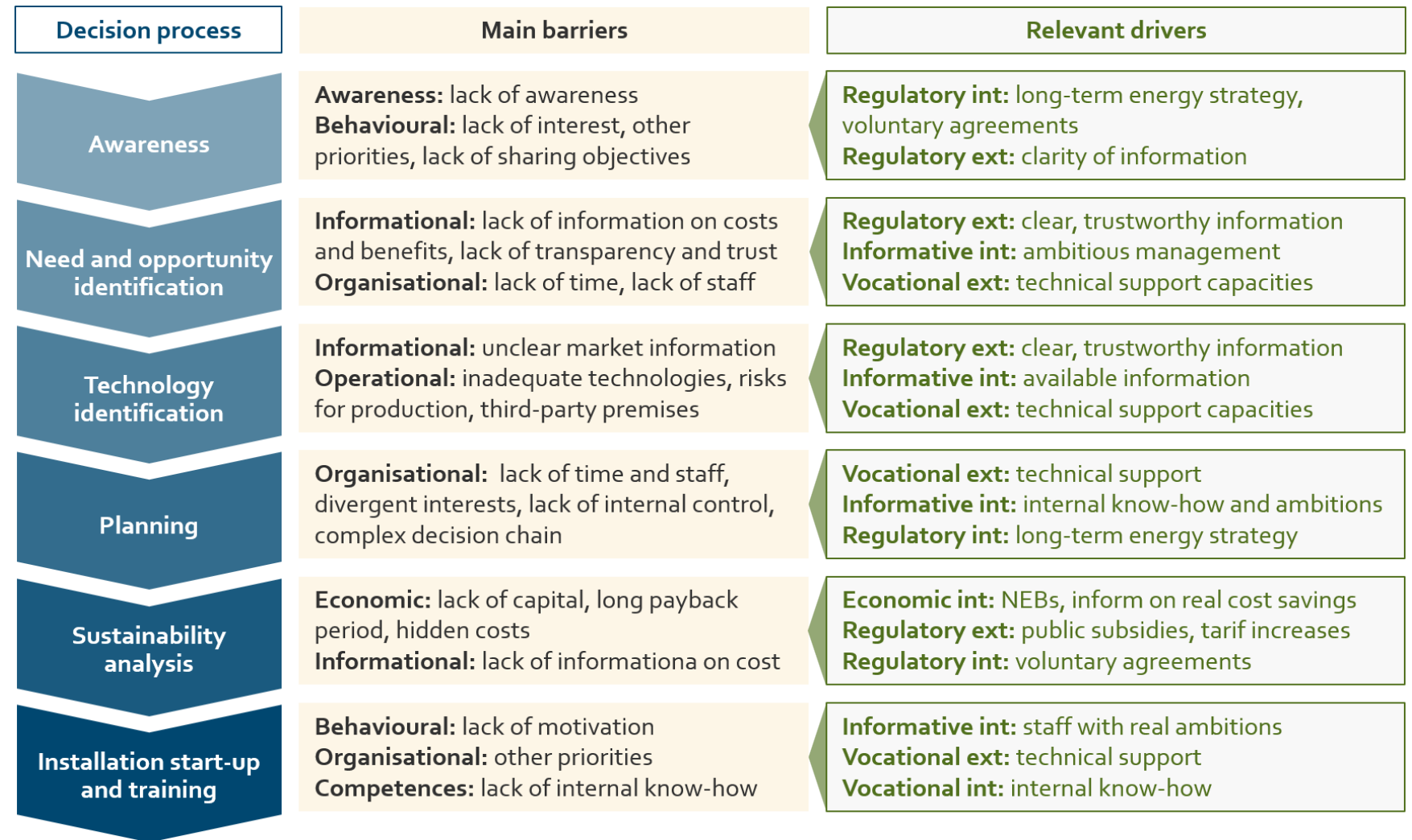


Results from a survey of 31 mid to large companies and 35 auditors from 5 countries (Audit2Measure D2.2)

# State of the art: barriers and drivers to the uptake of ESM

## Key findings

- More comprehensive analyses on national level is needed to better understand barriers.
- Main barriers are economic and organisational.
- Informational and competence barriers are perceived as less prominent.
- Smaller companies are affected stronger by organisational and informational barriers.
- Trainings on all management levels can increase ambitions and know-how.
- Energy Management Systems reduce informational barriers.



Overview of main barriers and relevant drivers along the decision-making process of companies (Audit-to-Measure D2.3; based on: Cagno et al. 2016, Cagno et al. 2013)

# State of the art: the role of auditors

## Key findings

- Surveyed companies mostly implement ESM in the areas recommended by the auditor.
- Over a third of surveyed auditors do not refer to NEBs.
- Over a third of surveyed auditors do not provide implementation guidance
- Requirements for ESM assessment metrics in audits vary strongly:

ESM economic metrics	CZ	GR	DE	IT	NL	ES
Simple Payback Period (SPP)	O	O		O		O
Return On Investment (ROI)					O	
Internal Rate Of Return (IRR)	O		O	O		R
Net Present Value (NPV)	O		O	O		R
Life Cycle Cost Analysis (LCCA)		R				

Overview of obligatory and recommended economic assessment metrics for ESM by country (Audit-to-Measure D2.1; results of policy review and expert questionnaires)

O = optional and R = Required

# Energy Audit Policy Factsheets: Romania

*Additional Countries for data regarding Energy Audits required by the Programme*

- Denmark
- Estonia
- Finland
- Hungary

**→ Romania**

If anyone wants to contribute please communicate with me

[cgtheo5957@gmail.com](mailto:cgtheo5957@gmail.com)

+306932319385 (viber)

## ROMANIA – ENERGY AUDIT POLICY

Audit obligation		
If yes, since? / If no, planned for?	Name of relevant policies	Mandatory audit frequency
Target group		Number of obligated enterprises (in 2019)
Exempted sectors of activity		Exemption through EMS (which standards?)
Audit scope and boundaries		
Process and reporting		
Applicable standards	National guidance, templates	Possible simplifications
Quality and compliance		
Relevant Authority	Data collection method	Data collection frequency
Quality control		Fines (please indicate maximum amount)
Existence of a national evaluation of the audit policy framework (please link if available)		
Auditors		
Accreditation / requirements	National registry / Database	Trade organisations

<https://ieecp.org/projects/audit-to-measure/>  
<https://a2m.epu.ntua.gr/#/admin/main>

Thank you for your attention!